RECORD AND BRIEFS

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IN THE
Supreme Court of the United States

TIMOTHY IVORY CARPENTER,

Petitioner,

v.

UNITED STATES OF AMERICA,

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SIXTH CIRCUIT

BRIEF OF AMICI CURIAE DATA & SOCIETY RESEARCH INSTITUTE AND FIFTEEN SCHOLARS OF TECHNOLOGY AND SOCIETY IN SUPPORT OF PETITIONER

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Katz v. *United States*, 389 U.S. 347 (1967).....8

Kyllo v. *United States*, 533 U.S. 27 (2001).....5, 8

Lopez v. *United States*, 373 U.S. 427 (1963).....10

Riley v. *California*, 134 S. Ct. 2473 (2014) ...5, 7, 9, 12

Smith v. *Maryland*, 442 U.S. 735 (1979) 5, 8, 11, 12

United States v. *Carpenter*, 819 F.3d 880 (6th Cir. 2016) 11

United States v. *Jones*, 565 U.S. 400 (2012) 5, 7, 11, 12

United States v. *Miller*, 425 U.S. 435 (1976) ....passim

United States v. *White*, 401 U.S. 745 (1971).....10

Other Authorities

Aaron Smith, Pew Research Center, *Labor Platforms: Technology-Enabled 'Gig Work'* (2016) 25

Aaron Smith, Pew Research Center, *Searching for Work in the Digital Era* 2 (2015).....21, 22, 35

Aaron Smith, Pew Research Center, *U.S. Smartphone Use in 2015* (2015) 15, 19

Alessandra Ram, *It's Your Right to Film the Police. These Apps Can Help*, Wired (May 3, 2015) 21

Amanda Lenhart, et al., Pew Research Center, *Teens, Technology, and Friendships* (2015) 17

American Bankers Association, *Survey: More Americans Using Mobile Deposit* (2015).....28

American Red Cross, *Social Media Grows Up – Red Cross Emergency Social Data Summit* (Aug. 12, 2010).....18, 19

Amy L. Gonzales, *Health Benefits and Barriers to Cell Phone Use in Low-Income Urban U.S. Neighborhoods: Indications of Technology Maintenance*, 2 Mobile Media & Comm. 233 (2014).....32, 37

Amy L. Gonzales, Lindsay Ems & Venkata Ratnadeep Suri, *Cell Phone Disconnection Disrupts Access to Healthcare and Health Resources: A Technology Maintenance Perspective*, 18 New Media & Soc'y 1422 (2016).....33, 37

Bill Siwicki, *American Well Partners With Samsung Electronics For Mobile Telehealth*, Healthcare IT News (Feb 21, 2017).....33

Brian Barrett, *Your Phone Will Replace Your Wallet at the ATM, Too*, Wired (Jan. 28, 2016).....26

Brief for Electronic Frontier Foundation, et al. as *Amici Curiae* in Support of Certiorari.....8

Brief in Opposition to Certiorari.....6

Christian Licoppe, *'Connected' Presence: The Emergence of a New Repertoire for Managing Social Relationships in a Changing Communication Technoscape*, 22 Env. & Planning D: Soc'y & Space 135, (2004).....16

City of Boston Apps, City of Boston.....32

College Parents of America, *Survey of Current College Parent Experiences* (2006).....17

ComScore, *The 2016 U.S. Mobile App Report* (2017) 28

D. Keith McInnes, et al., *Retaining Homeless Veterans in Outpatient Care: A Pilot Study of Mobile Phone Text Message Appointment Reminders*, 104 Am. J. Pub. Health S588 (2014) .34

Daniel Greene & Ifeoma Ajunwa, *Automated Hiring Platforms as Technological Intermediaries and Brokers* (work in progress) 22

Daniel J. Solove, *Digital Dossiers and the Dissipation of Fourth Amendment Privacy*, 75 S. Cal. L. Rev. 1083 (2002) 6

Daniel Schneider & Kristen Harknett, *Schedule Instability and Unpredictability and Worker and Family Health and Wellbeing* (2016) (working paper) 24

Devindra Hardawar, *Google Wallet to Come Pre-Installed on Phones for Major Carriers*, Engadget (Feb. 23, 2015) 26

Dina Bass, *New App Helps Shift Workers Swap Hours*, Boston Globe (July 13, 2016) 24

Emil Protalinski, *Facebook Passes 1.65 Billion Monthly Active Users, 54% Access the Service Only on Mobile*, VentureBeat (Apr. 27, 2016) 19

Encyclopedia of Social Media and Politics (Kerric Harvey, ed. 2014) 31

Eric Tsetsi & Stephen A. Rains, *Smartphone Internet Access and Use: Extending the Digital Divide and Usage Gap*, 5 Mobile Media & Comm. __ (2017) ..35

FDIC, *2015 FDIC National Survey of Unbanked and Underbanked Households* 28, 36

Federal Reserve Board, *Consumers and Mobile Financial Services 2015* (2015) 26

Gerald G. Ashdown, *The Fourth Amendment and the 'Legitimate Expectation of Privacy,'* 34 Vand. L. Rev. 1289 (1981).....6

Gerard Goggin & Christopher Newell, *Disabling Cell Phones*, The Cell Phone Reader: Essays in Social Transformation 155 (2007).....36

Holly Maluk, Myrna Pérez & Lucy Zhou, Brennan Center for Justice, *Voter Registration in a Digital Age: 2015 Update* (2015).....30

Jen Tolentino, Voting Information Project, *VIP Offers Free iOS App* (June 24, 2014).....31

Jim Harter et al., *Most U.S. Workers See Upside to Staying Connected to Work*, Gallup (Apr. 30, 2014) 23

Jonathan Hall & Alan Krueger, *An Analysis of the Labor Market for Uber's Driver-Partners in the United States* (2015) 25

Judy Wajcman, Michael Bittman & Judith Brown, *Families without Borders: Mobile Phones, Connectedness and Work-Home Divisions*, 42 Sociology 635 (2008).....17

Judy Wajcman, Pressed for Time: The Acceleration of Life in Digital Capitalism (2014) 16

Julia Ticona, *In 23 States, Lifeline Participation Higher Than Unemployment Insurance* (Aug. 8, 2017) 38

Karen Mossberger, Caroline J. Tolbert & Christopher Anderson, *The Mobile Internet and Digital Citizenship in African-American and Latino*

Communities, 20 Info. Comm. & Soc'y 1587 (2017) 29

Kathleen M. Cumiskey & Kendra Brewster, *Mobile Phones or Pepper Spray? Imagined Mobile Intimacy as a Weapon of Self-Defense for Women*, 12 Feminist Media Stud. 590 (2012).....20

Knight Foundation, *Mobile-First News: How People Use Smartphones to Access Information* 10 (2016) 30

Kristen Purcell & Lee Rainie, Pew Research Center, *Technology's Impact on Workers* (December 30, 2014) 23

Leena Rao, *Venmo Is On Track to Process $20 Billion in Payments Per Year*, Fortune (Oct. 20 2016).....29

Lewis R. Katz, *In Search of A Fourth Amendment for the Twenty-First Century*, 65 Ind. L.J. 549 (1990) .6

Linda K. Moore, *The Emergency Alert System (EAS) and All-Hazard Warnings*, Congressional Research Service (2010).....18

Lisa Eadicicco, *More People Now Shop on Amazon Using Smartphones and Tablets Than Computers*, Time (Dec. 28, 2015) 27

Lora Kolodny, *Passport Raises $8 Million To Help Cities Offer Pay-By-Mobile Parking, Transit*, TechCrunch (May 4, 2016) 28

Lorien C. Abroms, et al., *Text2Quit: Results From a Pilot Test of a Personalized, Interactive Mobile Health Smoking Cessation Program*, 17 J. Health Comm. 44 (2012) 34

Lyft, *Cities* 25

Mary Madden, et al., *Privacy, Poverty and Big Data: A Matrix of Vulnerabilities for Poor Americans*, 95 Wash. U. L. Rev. 53 (2017).....35

Meryl Alper, Digital Youth with Disabilities (2014) 37

Meryl Alper, Giving Voice: Mobile Communication, Disability, and Inequality (2017).....36

Natalie Matthews, *Why Women Need Personal Safety Apps* (May 1, 2014).....20

NENA Public Education & PSAP Training Committee, *Public Education Plan* (2015).....20

NENA, 9-1-1 Statistics.....20

NENA, SMS Text-to-9-1-1 Resources for PSAPs & 9-1-1 Authorities.....20

Nick Corasaniti, *Elections to Be Easier for Voters With an App*, N.Y. Times (Aug. 6, 2013).....31

Nikita Stewart, *Applying for Food Stamps in New York? There's an App for That*, N.Y. Times (July 24, 2017).....39

Orin S. Kerr, *The Case for the Third-Party Doctrine*, 107 Mich. L. Rev. 561, 563 n.5 (2009).....6

Paul Krebs & Dustin T. Duncan, *Health App Use Among US Mobile Phone Owners: A National Survey*, 3 JMIR mHealth & uHealth e101 (2015) 34

Penny Crosman, *Banks Experiment with Apps for the Underbanked*, American Banker (Sept. 22, 2014) 36

Pew Charitable Trusts, *Online Voter Registration: Trends in Development and Implementation* (2015).....30, 31

Pew Research Center, *Internet/Broadband Fact Sheet* (Jan. 12, 2017).....15

Pew Research Center, *Mobile Fact Sheet* (Jan. 12, 2017) 6, 15, 35, 36

Press Release, *Ceridian's Dayforce Recruiting Platform Provides Seamless Access to More Talent Through Indeed* (May 23, 2017) 22

Press Release, *Congresswoman Kelly Leads Effort to Move Government Websites Into the 21st Century*, Website of Congresswoman Robin Kelly (May 9, 2017) 39

Press Release, *Glassdoor Improves Mobile Apps for iPad and iPhone Making Job Searching Easier* (June 23, 2016) 22

Radicati Group, *Email Statistics Report, 2015 – 2019* (2015) 23

Richard Ling, Taken for Grantedness: The Embedding of Mobile Communication into Society (2012) 16, 19

Robert Wood Johnson Foundation, *Health Policy Brief* 1–2 (2016) 33

Ryan Mac, *Square Makes Small Business Push for Growth Ahead of Earnings*, Forbes (Feb. 17, 2016) 27

Social Security Administration, *Digital Government Strategy* 39

Spyros Kitsiou et al., *Effectiveness of mHealth Interventions for Patients with Diabetes: An Overview Of Systematic Reviews*, 12 PLoS ONE 1 (March 2017) 34

Stacy Cowley, *Cash Faces a New Challenger in Zelle, a Mobile Banking Service*, N.Y. Times (June 12, 2017) 29

Stephen Blumberg & Julian Luke, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July - December 2016* (2017) 14

Taylor Soper, *Starbucks Mobile Order-Ahead Usage Doubles from Last Year, Now up to 8M Transactions per Month*, GeekWire (Apr. 21, 2016) 27

Teena Maddox, *Research: 74 Percent Using or Adopting BYOD*, ZDNet (Jan. 5 2015).....23

Universal Service Administration, *Do I Qualify?* 38

USCIS, *USCIS Website, E-Verify Now Optimized for Mobile Devices* (Feb. 29, 2016) 39

White House, Digital Government.....38

Constitutional Provisions

U.S. Const. amend. IV. 8

INTEREST OF *AMICI CURIAE*[1]

This case presents an important question about the application of the Fourth Amendment's protection against unreasonable searches in the context of cell site location information (CSLI). *Amici* are researchers and scholars who focus on the implications of technology on society, and we file this brief to help the Court consider how the third-party doctrine should be interpreted in the digital age.

Data & Society Research Institute is a nonprofit, nonpartisan, multidisciplinary research institute located in New York City. Researchers at Data & Society in the fields of sociology, anthropology, communications, media studies, computer science, and law study the social and cultural issues arising from data-driven technological development. Data & Society has an interest in seeing legal and policy rules informed by an accurate understanding of current social science. Because this case turns in part on questions related to the ubiquity and use of a particular technology in society—cellular telephones—Data & Society has an interest in informing this Court of the current state of related social science research.

Individual *amici* are leading scholars from various disciplines who study technology and society

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[1] Both parties have filed with the Clerk of the Court letters of blanket consent to all *amicus* briefs under Rule 37.3. In accordance with Rule 37.6, no party's counsel authored this brief in whole or in part, and no one other than amici or their counsel made any financial contributions to the preparation or submission of this brief.

at U.S. and international institutions. The work of many of these scholars represents the state of the art in research on the social use and impact of mobile phone technology. *Amici* scholars have an interest in seeing law and policy accurately reflect their work and the work of their peers and their scholarly fields.

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SUMMARY OF ARGUMENT

This case presents the question of how a Fourth Amendment doctrine developed decades ago should apply to modern technology. The so-called "third-party doctrine" states that voluntary conveyance of information to a third party extinguishes any legitimate expectation of privacy in that information. But the cases that form the doctrine extended an "assumption of the risk" rationale from earlier cases to sectors where information sharing was not truly voluntary: banking and telephone use. This Court should give more meaning to the voluntariness requirement of the third-party doctrine in the digital age.

An update to the third-party doctrine is vital in this case because neither ownership of a cell phone nor the sharing of cell site location information are meaningfully voluntary. Cell phones have replaced landlines as the nation's communications tools and have become part of the country's critical safety infrastructure. Cell phones are enabling better outcomes—and are often necessary—in employment, commerce, civic participation, and health. Vulnerable populations rely on cell phones even more than non-vulnerable populations, so a holding that cell phones obviate privacy would be doubly devastating for them. And the U.S. Government itself has in many instances recognized how vital cell phones are to Americans.

The third-party doctrine is ultimately a shorthand test for expectations of privacy that society would find reasonable. The vast majority of Americans carry cell phones that constantly transmit

passive location information. To hold that society finds it unreasonable to expect privacy in that information is effectively to deny privacy in contemporary life. This Court should limit the third-party doctrine so that it does not apply here.

ARGUMENT

This case lies at the intersection of two different lines of Fourth Amendment cases decided by this Court.

The first line, dating back four decades, yielded the third-party doctrine. That rule states that there is no legitimate expectation of privacy in information voluntarily conveyed to third parties. See *Smith* v. *Maryland*, 442 U.S. 735, 743–44 (1979); *United States* v. *Miller*, 425 U.S. 435, 442 (1976). In the second line, a majority of the Court has recognized that society's reliance on modern technology requires that traditional Fourth Amendment doctrines be updated to maintain the proper balance between law enforcement and privacy interests. See generally *Riley* v. *California*, 134 S. Ct. 2473 (2014); *United States* v. *Jones*, 565 U.S. 400 (2012); *Kyllo* v. *United States*, 533 U.S. 27, 33 (2001).

This case is in the same vein as *Jones* and *Riley*. *Amici* believe the Court should update the third-party doctrine in light of the realities of how modern technology works and the impact of that technology on society. If we find it unreasonable for a person to expect privacy in their movements over time because they—like 95% of society—use a cell phone, then we are unwilling to recognize privacy in the digital age at all.

I. THE THIRD-PARTY DOCTRINE SHOULD NOT APPLY TO CELL SITE LOCATION INFORMATION BECAUSE CELL PHONE USE IS NOT TRULY VOLUNTARY IN MODERN-DAY SOCIETY.

The third-party doctrine has long been controversial. See, *e.g.*, Gerald G. Ashdown, *The Fourth Amendment and the 'Legitimate Expectation of Privacy,'* 34 Vand. L. Rev 1289, 1315 (1981); Lewis R. Katz, *In Search of A Fourth Amendment for the Twenty-First Century*, 65 Ind. L.J. 549, 564 (1990); Daniel J. Solove, *Digital Dossiers and the Dissipation of Fourth Amendment Privacy*, 75 S. Cal. L. Rev. 1083, 1138 (2002); see also Orin S. Kerr, *The Case for the Third-Party Doctrine*, 107 Mich. L. Rev. 561, 563 n.5 (2009) ("A list of every article or book that has criticized the doctrine would make this the world's longest law review footnote.")

Relying on the doctrine, the Government argues that despite the passivity with which CSLI is conveyed to cell carriers, Carpenter—and the 95% of Americans who own cell phones, Pew Research Center, *Mobile Fact Sheet* (Jan. 12, 2017) (hereinafter, *Mobile Fact Sheet*)[2]—voluntarily convey vast amounts of their historical location information to their cell carriers. See BIO, *passim* (using and quoting the word "voluntarily" sixteen times in describing precedent and relating it to the transfer of CSLI to the cellular providers). According to the Government, this means police should be able to obtain CSLI without a warrant.

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[2] http://www.pewinternet.org/fact-sheet/mobile (all Internet materials last visited Aug. 9, 2017).

This argument should not win the day because there is no volitional act of transmission. As this Court has observed, cell phones have become "a pervasive and insistent part of daily life." *Riley*, 134 S. Ct. at 2484. The 95% of Americans with cell phones all passively transmit data about their locations while their phones are powered on. This conveyance is not a truly "voluntary" act. Cell phone users should not be said to assume the risk that the government will track their movements simply because they carry a cell phone.

The implications of the third-party doctrine are particularly far-reaching as society embraces new technologies such as cell phones, cloud computing, and other data services. As JUSTICE SOTOMAYOR suggested in *Jones*, "it may be necessary to reconsider the premise that an individual has no reasonable expectation of privacy in information voluntarily disclosed to third parties." 565 U.S. at 417 (SOTOMAYOR, J., concurring). The Court should reject the argument that the third-party doctrine applies to CSLI by giving the volitional requirement more substance and recognizing that CSLI transmission is not voluntary.

A. The Court Should Adapt the Third-Party Doctrine for the Digital Age by Giving More Substance to the Voluntary Conveyance Requirement.

The Fourth Amendment commands that "|t|he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated[.]" U.S. Const. amend. IV. A Fourth Amendment search occurs when "the government violates a subjective

expectation of privacy that society recognizes as reasonable." *Kyllo*, 533 U.S. at 33 (2001); *Katz* v. *United States*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

The third-party doctrine is a shorthand rule about what privacy interests we as a society find "reasonable." The rationale underlying the doctrine is that people cannot reasonably expect privacy in information they willingly choose to convey to another. By deciding to expose that information, they assume the risk that it will be disclosed to the government. *Smith*, 442 U.S. at 744-45; *Miller*, 425 U.S. at 443.

In the context of CSLI, there are two ways to claim that the transmission of data to phone carriers is voluntary. First, CSLI could be offered voluntarily if the user could opt whether to transmit CSLI, given cell phone ownership and use. Second, CSLI may be transmitted voluntarily if cell phone ownership and use is a truly voluntary choice.

In their brief in support of certiorari, the Electronic Frontier Foundation and other civil society groups addressed the first question. Brief for Electronic Frontier Foundation, et al. as *Amici Curiae* in Support of Certiorari at 6-12, 21. As they explained, CSLI is generated passively and unknowingly, "whenever [cell phones] are on and searching for a signal." *Id.* at 21. The acts of going to a bank (*Miller*) and dialing a phone number (*Smith*) are at least nominally volitional in a way that passive transmission of CSLI is not. CSLI travels between a powered-on phone and cell tower, whether the user means for it to happen or not. To the extent that the voluntariness claim relies on a concrete

volitional act of sending information, this case is distinguishable from *Miller* or *Smith*.

The other possible argument is that having a cell phone and turning it on is a voluntary act sufficient to trigger the third-party doctrine. But that cannot be true for anything but the thinnest conception of voluntariness. As this Court has recognized, cell phones have become central to modern society. See *Riley*, 134 S. Ct. at 2484; *City of Ontario* v. *Quon*, 560 U.S. 746, 760 (2010) ("Cell phone and text message communications are so pervasive that some persons may consider them to be essential means or necessary instruments for self-expression, even self-identification."). Having a cell phone is necessary the same way having a car is necessary in most parts of the country.

B. The Third-Party Doctrine's Foundational Cases Predating *Miller* and *Smith* Support a More Robust Notion of Voluntary Conveyance.

While the third-party doctrine has voluntary conveyance at its core, from its inception it has given the concept of voluntariness short shrift. In *Miller*, the Court held that there was no privacy interest in banking information that was "voluntarily conveyed to the banks and exposed to their employees in the ordinary course of business." 425 U.S. at 442. But as Justice Brennan pointed out in his dissenting opinion, giving financial information to a bank was not meaningfully voluntary: "For all practical purposes, the disclosure by individuals or business firms of their financial affairs to a bank is not entirely volitional, since it is impossible to participate in the economic life of contemporary

society without maintaining a bank account." *Id.* at 451 (Brennan, J., dissenting).

The case law prior to *Miller* did not require such a hollow interpretation of voluntariness. *Miller* relied on a line of cases that dealt with legitimately voluntary disclosures. For example, in *Hoffa* v. *United States*, 385 U.S. 293 (1966), the police turned an associate of Jimmy Hoffa's against him in exchange for dropping the charges. The defendant had disclosed information freely to a third party, not expecting the third party to offer it to the police. The Court held that there was no Fourth Amendment violation because the speaker assumed the risk of disclosure: "[T]he Fourth Amendment [does not] protect[] a wrongdoer's misplaced belief that a person to whom he voluntarily confides his wrongdoing will not reveal it." *Id.* at 303.

Five years later, the Court held in *United States* v. *White*, 401 U.S. 745 (1971), that an informant's wearing of a wire did not change the analysis, holding that "one contemplating illegal activities must realize and risk that his companions may be reporting to the police." *Id.* at 752; see also *Lopez* v. *United States*, 373 U.S. 427, 439 (1963) (holding Fourth Amendment was not violated when informant was wearing a wire used for recording rather than instant transmission). To craft what would become the third-party doctrine, *Miller* borrowed this assumption-of-the-risk rationale and extended it to a basic functionality of society: doing business with a bank. 425 U.S. at 443. *Smith* then extended the reasoning to the telephone system, another basic functionality of society. 442 U.S. at 744.

The informant cases dealt with actual voluntary disclosures to a third party in a way that neither *Miller* nor *Smith* ever did. For that reason, recognizing that today's cell phone use is not meaningfully voluntary need not abrogate the entire third-party doctrine. Though Justice SOTOMAYOR was certainly correct when she wrote that the third-party doctrine is "ill suited to the digital age," *Jones*, 565 U.S. at 417 (SOTOMAYOR, J., concurring), this case can be resolved without overturning the doctrine entirely by giving more substance to the voluntariness requirement.

C. The Fourth Amendment's Content/Non-Content Distinction Does Not Solve the Third-Party Doctrine's Problems.

The court below suggested that the traditional Fourth Amendment distinction between "content" and "non-content" information resolves the problems presented by the third-party doctrine. 819 F.3d 880, 887 (6th Cir. 2016) (drawing a distinction between *Katz* and *Smith* because a wiretap captures the content of calls but a pen register does not).

But the content/non-content rationale does not make the third-party doctrine workable for two reasons. First, it is not clear in a world of data aggregation what is content and non-content. A single point of data about a person might not expose much about their life. But many data points together can reveal more sensitive information: activities, associations, habits, and other patterns. As the Court recognized in *Riley* and several Justices recognized in *Jones*, a large quantity of data may disclose private details about a person that a small amount of data

cannot. *Riley*, 134 S. Ct. at 2489 ("The sum of an individual's private life can be reconstructed through a thousand photographs labeled with dates, locations, and descriptions; the same cannot be said of a photograph or two of loved ones tucked into a wallet."); *Jones*, 565 U.S. at 430 (ALITO, J., concurring) ("We need not identify with precision the point at which the tracking of this vehicle became a search, for the line was surely crossed before the 4–week mark.").

Second, the content/non-content distinction is not what the third-party doctrine cases say. While *Smith* did draw a distinction between contents of a phone call and the phone numbers dialed, the relevant legal distinction for the rule applied by the Court was between what the pen register actually acquired—that is, what was shared with a third party—and what was kept private. 442 U.S. at 741 ("[A] pen register differs significantly from the listening device employed in *Katz*, for pen registers do not acquire the *contents* of communications.") (emphasis in original). If the same distinction is applied to communications and files that people disclose to third-party service providers, it is not at all clear that individuals would have a legitimate expectation of privacy in the content they choose to share with a service provider.

Miller goes even farther, expressly saying that the contents of bank documents are fair game under the third-party doctrine: "All of the documents obtained, including financial statements and deposit slips, contain only information voluntarily conveyed to the banks and exposed to their employees in the ordinary course of business." 425 U.S. at 442. This

formulation of the rule is deeply unsettling in an age when people increasingly store their most private photos, videos, messages, professional files, associations, and other information with third-party providers. If the third-party doctrine applies in the way *Miller* and *Smith* suggest, the Government would not need a warrant to gather any of this information. That is an untenable outcome.

The court need not resort to the content/non-content distinction to resolve this tension. It can be addressed by making the third-party doctrine more nuanced. The disclosure should only count as voluntary if the primary purpose of the sharer is to communicate the information to that particular recipient. That is what distinguishes *Hoffa* and *White* from *Smith and Miller*: the assumption of the risk comes with sharing a piece of information for no purpose other than sharing the information. If the sharing is instead a byproduct of using services, then it is not voluntary the same way. For example, if a person emails a message to someone's Google email address, that message should be protected by the Fourth Amendment despite Google's ability to access it. The sender is transmitting the message to Google for the purpose of conveying information to someone else. Google is simply acting as an intermediary to transfer the message from one person to another. Google is not a recipient of a communication, but a provider of a service. But if the same person emails a message to Google for the purpose of communicating with Google itself, then Google can disclose that message to the police with no Fourth Amendment implications. The difference is not content versus non-content, but rather the sender's decision to

voluntarily disclose information to a particular recipient.

II. THE USE OF CELL PHONES IN THE MODERN WORLD IS NOT MEANINGFULLY VOLUNTARY.

Cell phones are not a voluntary convenience in modern society. Every day, cell phones become more essential to fulfill basic needs such as communications with family, safety, health, employment, commerce, civic participation, and government services. It is impossible to square the centrality of modern cell phones to daily life with the notion that using one amounts to a waiver of Fourth Amendment rights in the data transmitted by them.

A. Cell Phones Are Necessary to Participate in the Most Basic Aspects of Everyday Social and Family Life.

Cell phones are now part of society's basic infrastructure. The most important reason why cell phones are indispensable may be the most obvious: they are our phones. More than half of all households in the U.S. have a cell phone but no landline. Stephen J. Blumberg & Julian V. Luke, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July - December 2016* (2017).[3] In 2016, more than seven of ten adults aged 25–29 (72.7%) and 30-34 (71%) lived in households with only wireless telephones. *Id.* at 2. Over 60% of children and those aged 18–24 live in cell phone-only households. *Id.* at 1–2. Cell phone

[3] https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201705.pdf.

ownership is nearly at population saturation. See *Mobile Fact Sheet.*

Cell phones are also increasingly the way that people access the internet. As internet access has become more central to participation in daily life, Americans use smartphones more than any other device to access the internet, even at home. *Id.* While many smartphone owners have difficulty with cell service at least occasionally, Aaron Smith, Pew Research Center, *U.S. Smartphone Use in 2015* at 52 (2015) (hereinafter, *U.S. Smartphone Use in 2015*),[4] mobile use of the internet continues to grow. *Mobile Fact Sheet.* And while cell phone ownership has increased consistently, ownership of laptop and desktop computers has remained relatively flat. *Id.* Since 2011, smartphone ownership in particular has increased by 8.4% per year, *id*, and broadband internet subscriptions remain relatively flat. Pew Research Center, *Internet/Broadband Fact Sheet* (Jan. 12, 2017).[5] Twelve percent of Americans own a smartphone, but do not have traditional broadband service at home. *Mobile Fact Sheet.*

According to Richard Ling, a communications scholar and expert on mobile communication, "the mobile phone moved from being useful to becoming essential, and is now taken for granted." Richard Ling, Taken for Grantedness: The Embedding of Mobile Communication into Society 157 (2012) (hereinafter, Taken for Grantedness). He writes that cell phones "ha[ve] restructured how we coordinate

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[4] http://assets.pewresearch.org/wp-content/uploads/sites/14/2015/03/PI_Smartphones_0401151.pdf.
[5] http://www.pewinternet.org/fact-sheet/internet-broadband.

our lives, keep ourselves safe, and organize our family." *Id.* at 124.

Other experts concur. As early as 2004, Christian Licoppe, a sociologist of information and communication, referred to the social changes that came from ubiquitous cell phones as "connected presence," arguing that there has been a "gradual shift in which communication technologies . . . are exploited to provide a continuous pattern of mediated interactions" that "[blur] the boundaries between absence and presence." Christian Licoppe, *'Connected' Presence: The Emergence of a New Repertoire for Managing Social Relationships in a Changing Communication Technoscape*, 22 Env. & Planning D: Soc'y & Space 135, 135–36 (2004). Judy Wajcman, a sociologist of digital technologies, explains that in today's world, "constant connectivity is the norm," and we have rearranged the way we structure our lives as a result. Judy Wajcman, Pressed for Time: The Acceleration of Life in Digital Capitalism, 10–11 (2014). As Ling observed, the use of mobile phones is no longer "simply a matter of personal choice; it is in general an assumed part of social interaction." Taken for Grantedness at 7.

Cell phones are especially significant for young people. Pew Research reports that 88% of teens have either a smartphone (73%) or a cell phone (15%). Amanda Lenhart, et al., Pew Research Center, *Teens, Technology, and Friendships* 10 (2015).[6] Overall, mobile phone based communication is the most important way teens communicate with their friends.

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[6] http://assets.pewresearch.org/wp-content/uploads/sites/14/2015/08/Teens-and-Friendships-FINAL2.pdf.

Eighty-eight percent text with their friends, (55% on a daily basis), 69% maintain relationships through phone calls, and 66% use social media (which itself is usually accessed via mobile). *Id.* at 3.

Family interactions have become dependent on cell phones as well. According to several scholars, "[o]ne of the most distinctive features of the mobile phone is its use for the microcoordination of family arrangements and schedules." Judy Wajcman, Michael Bittman & Judith Brown, *Families without Borders: Mobile Phones, Connectedness and Work-Home Divisions*, 42 Sociology 635, 636 (2008) (citations omitted). They suggest that this may be the reason cell phones became so popular, so quickly. *Id.* Cell phones also help families that are physically separated stay in touch. A 2006 survey of parents found that 90% of respondents said they use mobile phones to stay in touch with their children in college. College Parents of America, *Survey of Current College Parent Experiences* (2006).

B. Cell Phones Are Essential Public Safety Infrastructure and Personal Safety Equipment.

Because cell phones are ubiquitous, they have become a major part of public safety infrastructure. The original Emergency Alert System (EAS) was built in the 1950s to transmit emergency messages using over-the-air broadcasting technology. Linda K. Moore, *The Emergency Alert System (EAS) and All-Hazard Warnings*, Congressional Research Service, Summary (2010). Now jointly administered by the Federal Emergency Management Agency (FEMA), the Federal Communications Commission (FCC), the National Weather Service (NWS), it has been

updated to use Cell Broadcasting Services, which push alerts directly to cell phones. *Id.* These include direct presidential alerts, imminent threats to life and safety, and AMBER alerts, which provide information about abducted children. *Id.* at 10. In short, the federal government sends emergency information directly to cell phones because they are a reliable and effective way to reach the general public.

Cell phones are also key tools in natural disasters. Weather apps that rely on NWS data, including one created by NOAA, can push emergency alerts for severe weather and aid in evacuation. Once a disaster occurs, people use whatever means they have at hand to get help. In 2010, the Red Cross surveyed 1,058 adults about their use of social media in emergency situations, finding "if they needed help and couldn't reach 9-1-1, one in five would try to contact responders through a digital means such as e-mail, websites or social media." American Red Cross, *Social Media Grows Up – Red Cross Emergency Social Data Summit* (Aug. 12, 2010).[7] And "[i]f web users knew of someone else who needed help, 44 percent would ask other people in their social network to contact authorities, 35 percent would post a request for help directly on a response agency's Facebook page and 28 percent would send a direct Twitter message to responders." *Id.*

Facebook's Safety Check feature allows people in disaster areas to alert loved ones that they are safe. While 52.4% of global Facebook users access the site exclusively through a mobile device, Emil Protalinski, *Facebook Passes 1.65 Billion Monthly*

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[7] http://www.redcross.org/news/article/Social-Media-Grows-Up--Red-Cross-Emergency-Social-Data-Summit.

Active Users, 54% Access the Service Only on Mobile, VentureBeat (Apr. 27, 2016),[8] the number is likely much higher in an emergency situation. In 2015, a Pew Research Study found that 53% of smartphone owners "have been in an emergency situation where having their phone available helped resolve the situation." *U.S. Smartphone Use in 2015* at 25. As more people rely on social media to communicate information, others will know to go there to receive it; that is why Safety Check is effective. This expectation then reinforces the need for people to have cell phones to communicate in emergencies. See Taken for Grantedness at 94 ("[W]e collectively gain value from the system since . . . the more people there are who own a mobile phone, the better we are able to maintain social contact.").

People in smaller scale emergencies also turn to cell phones. According to the National Emergency Number Association (NENA), there are "an estimated 240 million calls made to 9-1-1 each year," of which "70% or more are made from wireless devices." NENA, 9-1-1 Statistics.[9] The 9-1-1 industry is also working with wireless carriers and the FCC to implement texting to 9-1-1 throughout the country. See NENA, SMS Text-to-9-1-1 Resources for PSAPs & 9-1-1 Authorities.[10] Text to 9-1-1 is projected to close gaps in service to people who have speech disabilities or are deaf, victims of domestic violence, or non-native English speakers. NENA Public

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[8] https://venturebeat.com/2016/04/27/facebook-passes-1-65-billion-monthly-active-users-54-access-the-service-only-on-mobile.

[9] https://www.nena.org/?page=911Statistics.

[10] http://www.nena.org/?page=textresources.

Education & PSAP Training Committee, *Public Education Plan* 9 (2015).[11]

Mobile phones are also an important means of ensuring personal safety, especially among women. Some mobile apps function as panic buttons that send an alert to select contacts. Natalie Matthews, *Why Women Need Personal Safety Apps*, Elle (May 1, 2014).[12] In a 2012 survey, college-aged women deemed mobile phones to be more effective than pepper spray for ensuring their personal safety. Kathleen M. Cumiskey & Kendra Brewster, *Mobile Phones or Pepper Spray? Imagined Mobile Intimacy as a Weapon of Self-Defense for Women*, 12 Feminist Media Stud. 590, 594 (2012). And apps such as "I'm Getting Arrested," "Hands Up 4 Justice," and "Stop and Frisk Watch" are aimed at over-policed populations such as African-American men and offer similar capacities. Alessandra Ram, *It's Your Right to Film the Police. These Apps Can Help*, Wired (May 3, 2015).[13]

A decision not to have a cell phone is therefore a decision not to own a device that increases personal safety, not to own a device that allows loved ones to contact or find you in an emergency, and not to participate in a system that enhances public safety for all. Such connections are not a luxury.

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[11] http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Standards/NENA-REF-003.1-2015_Texting_.pdf.

[12] http://www.elle.com/culture/tech/news/a14941/womens-safety-apps.

[13] https://www.wired.com/2015/05/right-film-police-apps-can-help.

C. Cell Phones Are Both Necessary to Find Employment and an Important Part of Workplace Infrastructure.

Today Americans find their jobs on the internet. According to a 2015 Pew Research Study, "a majority of U.S. adults (54%) have gone online to look for job information, [and] 45% have applied for a job online." Aaron Smith, Pew Research Center, *Searching for Work in the Digital Era* 2 (2015) (hereinafter, *Searching for Work*).[14] For Americans between the ages of 18 and 29, those numbers jump to 83% researching jobs online, and 79% applying. *Id.* at 10. Seventy-nine percent of Americans who applied for a job in the two years prior to the study used internet resources to do so, and 34% say these resources were the most important tool they used. *Id.* at 2. In fact, a recent survey showed that, barring job applicants that receive accommodation for disabilities, the top 20 Fortune 500 employers "all require job applications to be submitted online." Daniel Greene & Ifeoma Ajunwa, *Automated Hiring Platforms as Technological Intermediaries and Brokers* at 1 (unpublished manuscript).[15]

Job searching happens not just on the internet, but specifically on mobile phones. Twenty-eight percent of Americans, including more than half of those between ages 18 and 29, have used a smartphone to look for employment. *Searching for*

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[14] http://assets.pewresearch.org/wp-content/uploads/sites/14/2015/11/PI_2015-11-19-Internet-and-Job-Seeking_FINAL.pdf.

[15] http://dmgreene.net/wp-content/uploads/2014/11/GreeneAjunwaAutomated-Hiring-Plaforms-as-Technological-Intermediaries-and-Brokers.pdf.

Work at 3. These strategies are not limited to the youngest demographic either. Nearly 40% of 30- to 49-year-olds have looked for work using their smartphones. *Id.* at 17. The leading job recruiting websites are reporting that their traffic comes primarily from mobile devices. Press Release, *Ceridian's Dayforce Recruiting Platform Provides Seamless Access to More Talent Through Indeed* (May 23, 2017) (60% of Indeed's 200 million unique visitors per month from mobile)[16]; Press Release, *Glassdoor Improves Mobile Apps for iPad and iPhone Making Job Searching Easier* (June 23, 2016) (more than 50% of monthly visits from mobile).[17]

In addition to being necessary for job-hunting, mobile phones are often part of workplace infrastructure, and people in such jobs cannot refuse to have a cell phone. Market research estimates that the use of e-mail for business related communication has grown steadily over the past two years (3% per year), Radicati Group, *Email Statistics Report, 2015 – 2019* at 4 (2015),[18] and for the 59% of Americans who occasionally work outside of their "home base" workplace, 50% say the internet & cell phones are "very important" for allowing them to do their jobs remotely. Kristen Purcell & Lee Rainie, Pew Research Center, *Technology's Impact on Workers* 8

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[16] http://www.marketwired.com/press-release/ceridians-dayforce-recruiting-platform-provides-seamless-access-more-talent-through-2217809.htm.

[17] https://www.glassdoor.com/press/glassdoor-improves-mobile-apps-ipad-iphone-making-job-searching-easier.

[18] http://www.radicati.com/wp/wp-content/uploads/2015/02/Email-Statistics-Report-2015-2019-Executive-Summary.pdf.

(2014).[19] Gallup estimated in 2014 that "80% of full-time U.S. workers ha[d] a smartphone with Internet access," Jim Harter et al., *Most U.S. Workers See Upside to Staying Connected to Work*, Gallup (Apr. 30, 2014),[20] and market research estimates that 74% of companies have "bring your own device" policies that allow employees to use their personal devices for work. Teena Maddox, *Research: 74 Percent Using or Adopting BYOD*, ZDNet (Jan. 5, 2015).[21]

Many hourly jobs use on-call scheduling, a practice in which employees are required to call in to their workplace several hours before a shift starts to find out if they are needed. And recent estimates suggest that up to 90% of retail workers are subject to last-minute scheduling changes, Daniel Schneider & Kristen Harknett, *Schedule Instability and Unpredictability and Worker and Family Health and Wellbeing* (2016) (working paper),[22] which implicitly require that the worker be reachable by phone at all times. Many of these scheduling practices rely on a host of worker-facing scheduling apps, such as When I Work (which boasts over 100,000 enterprise customers), Zip Schedules, Sling, HotSchedules, TrackSmart, and Schedulehead. Twenty thousand workers at large retailers such as Starbucks,

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[19] http://assets.pewresearch.org/wp-content/uploads/sites/14/2014/12/PI_Web25WorkTech_12.30.141.pdf.

[20] http://www.gallup.com/poll/168794/workers-upside-staying-connected-work.aspx.

[21] http://www.zdnet.com/article/research-74-percent-using-or-adopting-byod.

[22] http://cdn.equitablegrowth.org/wp-content/uploads/2016/09/12135618/091216-WP-Schedule-instability-and-unpredictability.pdf.

McDonalds, and Old Navy use Shyft, an app that allows them to swap shifts with co-workers. Dina Bass, *New App Helps Shift Workers Swap Hours*, Boston Globe (July 13, 2016).[23]

Finally, so-called "gig economy" work has smartphone apps at its core. Ride-hailing services such as Uber and Lyft require their workers and customers to use smartphone apps to engage with the service. In 2014, Uber had 160,000 drivers signed up in the U.S. Jonathan Hall & Alan Krueger, *An Analysis of the Labor Market for Uber's Driver-Partners in the United States*, at 1 (2015).[24] Though Lyft's employment numbers are unavailable, it operates in 550 cities nationwide. Lyft, *Cities*.[25] The gig economy also includes services such as child and elder care (*e.g.*, care.com), house cleaning (*e.g.*, Handy), and catchall everyday tasks (*e.g.*, TaskRabbit). Cell phones are essential for people looking for work through these on-demand apps and the income is critical for many. Of the nearly 1 in 10 Americans that have earned income from on-demand labor apps, Pew has reported that 60% say the income they generate through them is "essential or important to their overall financial situation." Aaron

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[23] https://www.bostonglobe.com/business/2016/07/13/starbucks-baristas-want-better-hours-there-app-for-that/AXpGcIqA36Mcoc1udDJfVP/story.html.

[24] https://s3.amazonaws.com/uber-static/comms/PDF/Uber_Driver-Partners_Hall_Kreuger_2015.pdf.

[25] https://www.lyft.com/cities.

Smith, Pew Research Center, *Labor Platforms: Technology-Enabled 'Gig Work'* 4 (2016).[26]

Cell phones are already an integral part of looking for and carrying out work for a wide-spectrum of high and low-income workers. The acquisition and rapid development of mobile apps for the workplace suggest that cell phones will become more, not less important to the labor market in years to come, as many jobs become more flexible and traditional employment relationships change. The increasing importance of these technologies to lower-income Americans to secure their livelihoods suggests that economic necessity makes cell phones necessary, not voluntary.

D. Cell Phones Are Widely Used for Commerce and Banking and Are Rapidly Becoming Integral.

Commerce is rapidly becoming the province of the smartphone. Mobile payment apps—which store credit card information and interact with wireless readers in stores and in some apps—now come by default on most cell phones. Devindra Hardawar, *Google Wallet to Come Pre-Installed on Phones for Major Carriers*, Engadget (Feb. 23, 2015).[27] According to the Federal Reserve Board, 47% of smartphone owners made at least one mobile payment in 2014. Federal Reserve Board, *Consumers*

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[26] http://assets.pewresearch.org/wp-content/uploads/sites/14/2016/11/17161707/PI_2016.11.17_Gig-Workers_FINAL.pdf

[27] https://www.engadget.com/2015/02/23/google-wallet-softcard-deal.

and Mobile Financial Services 2015 at 16 (2015).[28] Several technology companies aim to replace wallets entirely. See Brian Barrett, *Your Phone Will Replace Your Wallet at the ATM, Too*, Wired (Jan. 28, 2016).[29]

Many retailers are creating and popularizing their own in-store payment apps. For example, in the first quarter of 2016, 24% of all Starbucks transactions in the U.S. were paid through Starbucks' mobile app. Taylor Soper, *Starbucks Mobile Order-Ahead Usage Doubles from Last Year, Now up to 8M Transactions per Month*, GeekWire (Apr. 21, 2016).[30] Mobile devices are even involved in traditional credit card transactions. Many small businesses without much infrastructure (*e.g.*, food trucks) would not exist without Square, a company that provides credit card readers that connect to smartphones or tablets, and allow businesses to process and track payments through their mobile app, Square Cash. See Ryan Mac, *Square Makes Small Business Push for Growth Ahead of Earnings*, Forbes (Feb. 17, 2016).[31]

Mobile wallets and in-store payment apps do not tell the whole story. E-commerce is moving to mobile as well. During the 2015 holiday season, nearly 70% of Amazon customers placed orders on a mobile device, and over 70% of Wal-Mart's website traffic—leading to 50% of purchases—came from

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[28] https://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf.

[29] https://www.wired.com/2016/01/cardless-atms.

[30] https://www.geekwire.com/2016/starbucks-mobile-order-ahead-usage-doubles-last-year-now-8m-transactions-per-month.

[31] https://www.forbes.com/sites/ryanmac/2016/02/17/square-small-business-payroll-capital-transition/#29411c237fc7.

mobile. Lisa Eadicicco, *More People Now Shop on Amazon Using Smartphones and Tablets Than Computers*, Time (Dec. 28, 2015).[32] Surely that number is higher now.

The transition of commerce to mobile apps extends far beyond retail. Take transportation, for example. Most major U.S. airlines—including Delta, JetBlue, Southwest, United, and Virgin America—offer check-in via mobile app. Companies like Passport have entered into government partnerships in various cities to provide pay-by-mobile apps for parking meters and other public transportation, such as ParkBoston and ParkChicago. Lora Kolodny, *Passport Raises $8 Million To Help Cities Offer Pay-By-Mobile Parking, Transit*, TechCrunch (May 4, 2016).[33] Mobile mapping apps are ubiquitous; as of 2016, Google's app had 95.3 million global users and Apple's had 60.3 million. ComScore, *The 2016 U.S. Mobile App Report* 32 (2017).[34]

Banking is another sector increasingly reliant on mobile. Most banks have apps, which allow for checking balances, making payments, and mobile check deposits. According to an FDIC study, in 2015, 31.9% of banked households used mobile apps, up from 23.3% in 2013. FDIC, *2015 FDIC National Survey of Unbanked and Underbanked Households* 24 (hereinafter, *FDIC Study*).[35] As Nessa Feddis of

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[32] http://time.com/4162188/amazon-holiday-shopping-statistics-2015.

[33] https://techcrunch.com/2016/05/04/passport-raises-8-million-to-help-cities-offer-pay-by-mobile-parking-transit.

[34] https://www.comscore.com/Insights/Presentations-and-Whitepapers/2016/The-2016-US-Mobile-App-Report.

[35] https://www.fdic.gov/householdsurvey/2015/2015report.pdf.

the American Bankers Association observed, "[p]eople are receiving checks less frequently, but when they do they're increasingly turning to mobile banking to deposit them." American Bankers Association, *Survey: More Americans Using Mobile Deposit* (2015).[36] Unsurprisingly, what has replaced the physical check are more mobile payment apps. Whether paying for services, rent, or a portion of last night's dinner out, people are using mobile payment apps such as Venmo—which processes $20 billion in payments per year, Leena Rao, *Venmo Is On Track to Process $20 Billion in Payments Per Year*, Fortune (Oct. 20, 2016)[37]—as well as PayPal, Google Wallet, and Zelle, a mobile service launched in June by big banks to compete with Venmo. Stacy Cowley, *Cash Faces a New Challenger in Zelle, a Mobile Banking Service*, N.Y. Times (June 12, 2017).[38]

E. Cell Phones Have Become a Key Technology for Civic Participation.

A 2017 study of internet users in Chicago found that people who have mobile access to the internet are more likely to engage in civic activities than those who do not have mobile access. Karen Mossberger, Caroline J. Tolbert & Christopher Anderson, *The Mobile Internet and Digital Citizenship in African-American and Latino Communities*, 20 Info. Comm. & Soc'y 1587, 1597 (2017). The study found that for African Americans and Latino populations specifically, having access to

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[36] http://www.aba.com/Press/Pages/082515MobileBankingSurvey.aspx.

[37] http://fortune.com/2016/10/20/venmo-20-billion.

[38] https://www.nytimes.com/2017/06/12/business/dealbook/mobile-banking-zelle-venmo-apple-pay.html.

mobile internet has positive effects on the likelihood that they will engage in civic activities online, including "searching for neighborhood information, use of the City of Chicago website, use of Facebook and Twitter for civic information, searching for information about politics, accessing government information or reading online news." *Id.* at 1596–97.

Mobile phones are also how people get their news. A Knight Foundation study on how people use phones to access information found that "social networking apps on mobile compete as a news source with other media forms trailing only TV but pulling ahead of radio, newspapers and magazines among social networkers." Knight Foundation, *Mobile-First News: How People Use Smartphones to Access Information* 10 (2016).[39] According to the Nielsen Electronic Mobile Measurement Panel (which Knight cites), 89% of the adult U.S. mobile population access news and information through their mobile device. *Id.* at 4.

Lack of access to a cell phone may reduce an individual's opportunities for political participation on both a local and national level. For example, online voter registration first became available in Arizona in 2002, and as a result, voters registered online rose from 25% in 2003 to 39% in 2008. Holly Maluk, Myrna Pérez & Lucy Zhou, Brennan Center for Justice, *Voter Registration in a Digital Age: 2015 Update* 13 (2015).[40] By 2014, online voter

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[39] https://kf-site-production.s3.amazonaws.com/publications/pdfs/000/000/187/original/Topos_KF_Mobile-Report_Final_052616.pdf.

[40] https://www.brennancenter.org/publication/voter-registration-digital-age-2015-update.

registration had become available in 20 states. Pew Charitable Trusts, *Online Voter Registration: Trends in Development and Implementation* 2 (2015).[41] Voters are increasingly registering through mobile-optimized websites that people access with smartphones. *Id.* Major projects aimed at boosting voter participation have focused on mobile phones as an avenue for reaching eligible voters, by, for example, providing information on polling place locations and ballot information.

In 2013, the New York City Campaign Finance Board launched NYC Votes, a mobile app designed to encourage political participation by allowing people to begin voter registration, monitor their registration status, and receive information, such as the ability to look up local candidates. Nick Corasaniti, *Elections to Be Easier for Voters With an App*, N.Y. Times (Aug. 6, 2013).[42]

The Voter Information Project, a joint effort from The Pew Charitable Trusts, Google, and state and local officials, has created a mobile app that provides polling place, ballot, and candidate information. Jen Tolentino, Voting Information Project, *VIP Offers Free iOS App* (June 24, 2014).[43] Relatedly, the Obama campaigns showed that mobile devices could be "a powerful tool for political campaigns by centralizing canvassing and fundraising innovations." Encyclopedia of Social Media and Politics 899 (Kerric Harvey, ed. 2014).

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[41] http://www.pewtrusts.org/~/media/assets/2015/05/ovr_2015_brief.pdf.

[42] http://www.nytimes.com/2013/08/07/nyregion/registration-as-a-voter-to-be-easier-via-phone.html.

[43] https://votinginfoproject.org/news/vip-offers-free-ios-app.

Outside of elections, government agencies have invested in mobile apps that provide services, information, and other resources. An online Federal Government Mobile Apps Directory lists 338 mobile apps that include "government native apps, hybrid apps, responsive sites, and mobile websites that offer official information and services in the palm of your hand." Federal Government Mobile Apps Directory, USA.gov.[44] Several major cities, including Boston, New York, Philadelphia, Chicago and Los Angeles have created mobile app versions of 311 service requests, where residents can report city maintenance issues like potholes and graffiti. See, *e.g.*, City of Boston Apps, City of Boston.[45]

These trends are likely to intensify. As budgets shrink and funding is cut, governments will employ fewer people attending to lines and fewer people answering phones. Government, like the private sector, will often turn to technology as a less expensive substitute for labor, using apps to directly interact with citizens. As government moves to mobile more every day, those without cell phones will miss out on crucial services.

F. Cell Phones Are Enabling Better Health Outcomes.

Many people with chronic illnesses must maintain contact with physicians and loved ones to manage their conditions. For them, being without a mobile phone could be seriously detrimental to health outcomes, even deadly. See generally Amy L.

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[44] https://www.usa.gov/mobile-apps.

[45] https://www.boston.gov/departments/innovation-and-technology/apps.

Gonzales, *Health Benefits and Barriers to Cell Phone Use in Low-Income Urban U.S. Neighborhoods: Indications of Technology Maintenance*, 2 Mobile Media & Comm. 233 (2014) (hereinafter, *Health Benefits and Barriers to Cell Phone Use*). In a recent interview-based study, mobile phones were such an important resource for low-income patients managing HIV that researchers found "nearly all clients viewed the cell phone as a primary necessity"—so much that some re-organized their budgets for essentials like food and gas in order to keep their phones in operation. Amy L. Gonzales, Lindsay Ems & Venkata Ratnadeep Suri, *Cell Phone Disconnection Disrupts Access to Healthcare and Health Resources: A Technology Maintenance Perspective*, 18 New Media & Soc'y 1422, 1429 (2016) (hereinafter, *Cell Phone Disconnection Disrupts Access*).

According to the Robert Wood Johnson Foundation, 20% of Americans live in rural areas, but only 9% of physicians practice there. Robert Wood Johnson Foundation, *Health Policy Brief* 1–2 (2016).[46] Still a nascent industry, telehealth allows people in these areas without ready access to doctors to get diagnoses, interact in real-time video, and have remote patient monitoring. *Id.* at 1–2. While telehealth encompasses more than mobile phones, investment is pouring in for mobile applications. See Bill Siwicki, *American Well Partners With Samsung Electronics For Mobile Telehealth*, Healthcare IT

[46] http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_162.pdf.

News (Feb 21, 2017).[47] And initial research of remote health monitoring is promising for health outcomes. See Spyros Kitsiou et al., *Effectiveness of mHealth Interventions for Patients with Diabetes: An Overview Of Systematic Reviews*, 12 PLoS ONE 1 (March 2017).

Mobile phones are also being used to intervene in health outcomes. A survey of smartphone users found that 58% have downloaded a mobile health app, primarily for fitness and nutrition tracking, and most of those people use them daily. Paul Krebs & Dustin T. Duncan, *Health App Use Among US Mobile Phone Owners: A National Survey*, 3 JMIR mHealth & uHealth e101 at 5 (2015). Further research is being done on externally driven mobile interventions. An NIH study found that text messages are a useful way to help homeless veterans "reduce missed visits and emergency department use." D. Keith McInnes, et al., *Retaining Homeless Veterans in Outpatient Care: A Pilot Study of Mobile Phone Text Message Appointment Reminders*, 104 Am. J. Pub. Health S588, S593 (2014). Initial results on a pilot program called Text2Quit, in which educational and motivational text messages are sent to smokers who are trying to quit, showed high user engagement and support for further research. Lorien C. Abroms, et al., *Text2Quit: Results From a Pilot Test of a Personalized, Interactive Mobile Health Smoking Cessation Program*, 17 J. Health Comm. 44, 44 (2012).

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[47] http://www.healthcareitnews.com/news/american-well-partners-samsung-electronics-mobile-telehealth.

G. Cell Phones Are Especially Critical to Vulnerable Populations.

As the internet becomes ever more essential to daily American life, some of the most vulnerable populations in the country are relying on cell phones for access. Pushed by economic necessity, the need to access critical government services or obtain medical or emergency information, cell phones are not optional for these populations. Deeming their use as a voluntary convenience risks amplifying the vulnerabilities they already face.

Overall, younger adults, lower-income Americans, and non-white Americans are particularly likely to own smartphones, but not have broadband in their homes. *Mobile Fact Sheet.* Smartphones are more popular among lower socioeconomic status groups because they are less expensive than laptops and come bundled with internet access. See Eric Tsetsi & Stephen A. Rains, *Smartphone Internet Access and Use: Extending the Digital Divide and Usage Gap*, 5 Mobile Media & Comm. __ (2017) (published online but not yet in print).[48] Pew found that in households making less than $30,000 per year, 21% of smartphone owners rely on their phones for internet access. *Mobile Fact Sheet*, and Mary Madden and others found that "63% of smartphone Internet users who live in households earning less than $20,000 per year say they mostly go online using their cell phone." Mary Madden, et al., *Privacy, Poverty and Big Data: A Matrix of Vulnerabilities for Poor Americans*, 95 Wash. U. L. Rev. 53, 70 (2017).

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[48] http://journals.sagepub.com/doi/abs/10.1177/2050157917708329.

Many of the cell phone use cases discussed above have disparate effects on different populations. For example, African Americans "tend to rely heavily on smartphones" when looking for work. *Searching for Work* at 17. Thirty-eight percent of African-Americans seek jobs on their smartphones, while only 24% of white people do. *Id.* Given that Pew's data was collected in 2014, and Pew found a sharp uptick in smartphone ownership in lower income and over-50 populations last year, *Mobile Fact Sheet*, these estimates almost surely undercount.

Mobile access is helping people that would not otherwise use banks. Seven percent of U.S. households are unbanked and another 20% are considered "underbanked," which means the household has a checking or savings account, but still used "products or services from an alternative financial services provider in the past 12 months," such as check cashing or payday loans. *FDIC Study* at 13. Underbanked households are more likely than banked to need to pay someone—a landlord, for example—the same day they receive funds. The "convenience and speed" of mobile banking gives them the ability to use traditional banks more often rather than alternative, often predatory, financial services. Penny Crosman, *Banks Experiment with Apps for the Underbanked*, American Banker (Sept. 22, 2014).[49]

Mobile services are especially critical for the ill and disabled, as well. For people with disabilities, cell phones are used as assistive technologies. Numerous scholars have illustrated the importance

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[49] https://www.americanbanker.com/news/banks-experiment-with-apps-for-the-underbanked.

of mobile devices to children with hearing, speech, and cognitive disabilities. See, *e.g.*, Meryl Alper, Giving Voice: Mobile Communication, Disability, and Inequality (2017); Gerard Goggin & Christopher Newell, *Disabling Cell Phones*, The Cell Phone Reader: Essays in Social Transformation 155 (2007). For example, "Smartphones . . . can be a primary or vital form of communication for children who have difficulty or prefer not to use embodied oral speech." Meryl Alper, Digital Youth with Disabilities 24 (2014). And as discussed above, cell phones are necessary for chronically ill patients to maintain contact with physicians and loved ones to manage their conditions, *Health Benefits and Barriers to Cell Phone Use*, at 243, and nearly all HIV-positive people in a recent study viewed a cell phone as a primary necessity. *Cell Phone Disconnection Disrupts Access*, at 1429.

In sum, cell phones are particularly necessary tools for people who are disadvantaged in society. A finding that the Fourth Amendment does not protect CSLI will disproportionately impact these vulnerable populations.

H. United States Government Programs and Initiatives Have Recognized the Necessity of Mobile Technology.

In the present case, the Government argues that Carpenter's CSLI was voluntarily given to his phone carrier. But the U.S. Government has elsewhere acknowledged the necessity of cell phones to daily life by recognizing that government services must be optimized for mobile use.

Under the Obama administration, the Digital Government Initiative set a goal to "enable the American people and an increasingly mobile workforce to access high-quality digital government information and services anywhere, anytime, on any device." White House, Digital Government.[50] In addition, the Obama administration also deeply subsidized cell phone services for households below 135% of the poverty line or who are participating in another federal assistance program. Universal Service Administration, *Do I Qualify?*[51] Comparing the most recent available data from both this program and unemployment insurance, in 23 states, a greater percentage of eligible people took advantage of the cell phone subsidies than unemployment benefits. Julia Ticona, *In 23 States, Lifeline Participation Higher Than Unemployment Insurance* (Aug. 8, 2017).[52]

In May 2017, the Connect to Government Act was introduced in the House to require federal agencies to optimize their websites for mobile users. The author of the act, Representative Robin Kelly, said "In 2017, it's unreasonable that one in 10 Americans cannot connect with their government because they only use mobile devices . . . No business or organization would build a website without mobile optimization, why should the government?" Press Release, *Congresswoman Kelly Leads Effort to Move*

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[50] https://obamawhitehouse.archives.gov/sites/default/files/omb/egov/digital-government/digital-government.html.

[51] http://www.lifelinesupport.org/ls/do-i-qualify/default.aspx.

[52] http://juliaticona.com/lifeline-participation.

Government Websites Into the 21st Century, Website of Congresswoman Robin Kelly (May 9, 2017).[53]

Other parts of the government have implicitly recognized the importance of cell phones by investing heavily in mobile app interfaces. The Department of Agriculture recently invested $1.5 million to develop an app to help people apply for food stamps in New York City, where 68% of people who receive them have smartphones. Nikita Stewart, *Applying for Food Stamps in New York? There's an App for That*, N.Y. Times (July 24, 2017).[54] In 2012, the Social Security Administration created a Digital Strategy Plan, which emphasized the need to create mobile apps for wage reporting, optimization of FAQs, contacts with SSA offices, and financial planning. Social Security Administration, *Digital Government Strategy*.[55] In addition, U.S. Citizenship and Immigration Services has made numerous smartphone-driven changes after finding that nearly 30% of visitors to the English site and over 50% of those visiting the Spanish site use a mobile device. USCIS, *USCIS Website, E-Verify Now Optimized for Mobile Devices* (Feb. 29, 2016).[56]

These heavy government investments in mobile happened because cell phones are ubiquitous and important to those people that rely on government programs. Because these efforts are

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[53] https://robinkelly.house.gov/media-center/press-releases/congresswoman-kelly-leads-effort-to-move-government-websites-into-the.

[54] https://www.nytimes.com/2017/07/24/nyregion/food-stamps-hra-app.html.

[55] https://www.ssa.gov/digitalstrategy.

[56] https://www.uscis.gov/news/uscis-website-e-verify-now-optimized-mobile-devices.

increasingly optimized for mobile engagement, the technology will only become more indispensable for engaging with the government in the future.

CONCLUSION

Ninety-five percent of Americans have cell phones because cell phones have become an essential part of daily life. To hold that CSLI is transmitted voluntarily for purposes of the third-party doctrine would be to find that nearly all Americans have waived their Fourth Amendment protections in data transmitted by those devices. That rule would fall even harder on the most vulnerable in society, who rely on cell phones more than others.

We urge the Court to limit the third-party doctrine and construe it as inapplicable to cell phone location data.

Respectfully Submitted,

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